REMARKS

Claims 1 to 7 are all the claims pending in the application, prior to the present amendment.

Claims 1 to 4, 6 and 7 have been rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 3, 988,392 to Kameda et al in view of JP 10-306192 to Tadokoro.

The Examiner states that Kameda et al disclose the recitations of the present claims, except that Kameda et al do not "explicitly state the claimed limitation (d)." The Examiner states that Kameda et al teach that the elastomer should have a particle size of 500-2500A and a cross-linking agent content of 0.5-5 pbw. The Examiner asserts that these teachings equate to a cross-linking agent content equal to 0.002d-0.1d, where d is the average particle size of the elastomer.

The Examiner further states that Kameda et al teach that the cross-linking content should be controlled to control the degree of swelling of the elastomer and the gel content. The Examiner concludes that it would have been obvious to optimize the cross-linking content of the elastomer taught in Kameda et al to control its degree of swelling and gel content, to thereby control processability, luster, transparency and impart resistance.

Applicants submit that Kameda et al and JP '192 do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

The present invention as set forth in claim 1 as amended above is directed to an acrylic film, composed of a resin composition (C) that comprises an acrylic graft copolymer (A) containing an acrylic ester rubber polymer and a methacrylic polymer (B) containing 80% by

weight or more of methyl methacrylate. In the present invention, the following five items are observed:

(1) the content of the acrylic ester rubber polymer in the resin composition (C) is 5% by weight or more and 30% by weight or less,

(2) the average particle size of the acrylic ester rubber polymer is 500 to 2000 Å,

(3) the relationship between the average particle size d (Å) of the acrylic ester rubber polymer and the amount w (% by weight) of a cross-linking agent used in the acrylic ester rubber polymer satisfies the following equation:

$0.0025d \leq w \leq 0.0045d$,

(4) the graft ratio of the acrylic graft copolymer (A) is 30% or more and 200% or less, and

(5) the reduced viscosity of methyl ethyl ketone soluble matter in the resin composition (C) is 0.2 to 0.8 dl/g.

Thus, applicants have amended claim 1 to state that "d" and "w" satisfy the following equation: $0.0025d \leq w \leq 0.0045d$. Support for this amendment can be found at page 9, lines 2-5 of the specification, where it is disclosed that this is a "much more" preferred range. Applicants have canceled claim 2 and have amended the remaining claims so that they do not depend from canceled claim 2.

Applicants have found that an acrylic film which satisfies the equation set forth in claim 1 has excellent stress-whitening resistance.

Applicants submit that Kameda et al do not disclose or suggest an acrylic film that satisfies the relationship "$0.0025d \leq w \leq 0.0045d$," and do not disclose or suggest that a film that satisfies this relationship has excellent stress-whitening resistance.

In particular, applicants disagree with the Examiner's conclusion that the Kameda et al teachings equate to a cross-linking agent content w equal to 0.002d-0.1d.

Kameda et al nowhere indicate that the amount of cross-linking agent and the particle size have a relationship with each other and nowhere teach that these two parameters should have the relationship set forth in the present claims. The Examiner has created a synthetic range from separate teachings of Kameda et al. This creation of a range is not a disclosure that appears in Kameda et al.

Moreover, applicants submit that even if it were proper to calculate a synthetic range from the particle size range and the range for the amount of cross-linking agent disclosed in Kameda et al, one would not arrive at the relationship set forth in the present claims.

Thus, at a particle diameter d of 500A disclosed in Kameda et al, the relationship between this particle diameter and the 0.5 to 5 pbw of cross-linking agent is $0.001d \leq w \leq 0.01d$. At a particle diameter d of 2500A of Kameda et al, the relationship between the particle diameter and the 0.5-5 pbw of cross-linking agent is $0.0002d \leq w \leq .002d$. None of these relationships is the relation set forth in claim 1.

These two relationships can be combined in a variety of ways. If one takes the highest value from the first relationship and the lowest value from the second relationship, the resulting relation would be $0.0002d \leq w \leq 0.01d$. If one takes the lowest value from the first relationship

and the highest value from the second relationship, the resulting relation would be $0.001d \leq w \leq 0.002d$. Another theoretical combination would be the combination of the two lowest values, resulting in a relation of $0.0002d \leq w \leq 0.001d$. Still another combination would be the combination of the two highest values, resulting in a relation of $0.002d \leq w \leq 0.01d$.

Applicants submit, however, that it is improper to create the above synthetic ranges from the disclosure of Kameda et al because Kameda et al nowhere teach or suggest that there is desired relation between d and w, and nowhere teach or suggest that d and w should be combined in the above manner. Kameda et al simply teach separate ranges for d and w, and do not teach that any particular relation should exist between d and w.

Further, none of the above relations is the relation of claim 1. While a number of the above relationships overlap the relationship in claim 1, this overlap does not describe the entire claimed range of claim 1 with sufficient specificity to anticipate the range. The ranges in Kameda et al and the range in claim 1 are different, and are not the same.

Further, based on the recently decided case of *Atofina v. Great Lakes Chemical Corporation*, 78 USPQ2d 1417 (Fed. Cir. 2006), relating to ranges, applicants submit that Kameda et al do not disclose the range of claim 1. This case clarifies when a range in the prior art will be considered to anticipate a claimed range. Applicants submit that in view of this case, it is clear that the ranges disclosed in Kameda et al do not anticipate, that is, teach the ranges set forth in the present claims.

In particular, in *Atofina*, the Federal Circuit made it clear that a prior art temperature range of 100° to 500°C, which is broader than and fully encompasses a specific claimed

temperature range of 330° to 450°C, does not anticipate the claimed 330° to 450°C recitation, because it does not describe the claimed range with sufficient specificity.

In addition, the Federal Circuit held that a prior art preferred temperature range of 150° to 350°C that slightly overlaps the claimed range of 330° to 450°C does not anticipate the claimed range, because the slightly overlapping range is not disclosed as being a species of the claimed range of 330 to 450°C.

Further, the Federal Circuit held that the prior art disclosure of a range of 150° to 350°C does not constitute a specific disclosure of the end points of that range, that is, 150°C and 350°C. The disclosure of a range of 150° to 350°C is a disclosure only of that range, and not a specific temperature in that range, and the disclosure of a range is no more a disclosure of the end points of the range than it is of each of the intermediate points. Accordingly, the prior art did not disclose a specific embodiment of the claimed temperature range.

Similarly, with respect to molar ratios, the Federal Circuit held that a disclosure in the prior art of a ratio of 0.001 to 1%, which overlaps but does not fall within the claimed ratio of 0.1 to 5.0%, is not an anticipation of the ratio of 0.1 to 5.0%. The court found that although there is a slight overlap, one could not determine that this overlap described the entire claimed range with sufficient specificity to anticipate the claimed limitation. The court held that the ranges are different and not the same.

Based on these principles, applicants submit that it is clear that Kameda et al do not disclose the range set forth in claim 1.

With respect to the Examiner's argument that it would have been obvious to optimize the amounts for the cross-linking agent and particle size, applicants submit that such an optimization would not necessarily result in the claimed range. Thus, an optimization for controlling the degree of swelling and gel content is not the same as an optimization for controlling stress whitening.

Kameda et al contain a number of working examples which disclose the particle size of the elastomer and the amount of cross-linking agent. Applicants have calculated the relationship between w and d in all of the Examples and Comparative Examples of Kameda et al for which there is sufficient information to make a calculation, and set forth the results of this calculation in the Table below.

In determining the amount of cross-linking agent employed in the examples of Kameda et al, applicants have employed amounts based on the amount of monomers that are present in the examples. This is clear from the specification of the present application, especially in Tables 1, 2 and 5, where the cross-linking agent contents are calculated based on the amount of monomers that are present in the examples.

Kameda et al employed, in all Examples and Comparative Examples for which calculations can be made, cross-linking agent contents outside the range defined in claim 1 as shown in the Table below.

In all of the Examples and Comparative Examples of Kameda et al for which there is sufficient information to make a calculation, the amount of cross-linking agent is lower than

permitted by the equation of claim 1, except for Examples 14 and 15, where it is higher than permitted by the equation.

Kameda et al employed a cross-linking agent content of 1.00 wt% or less in almost all of their examples, which is below the lower limit of the range defined in claim 1. Applicants submit that the use by Kameda et al of cross-linking agent amounts of less than 1% in almost all of their examples, which is below the lower limit of the range defined in claim 1, would lead one of ordinary skill in the art to employ such amounts when making acrylic ester rubber polymers for acrylic films, and would not lead one of ordinary skill in the art to the range set forth in claim 1.

				Calculated Cross-linking Range Permitted by Present Invention		
Example	**Cross-linking Agent**	**Remarks**	**Particle Size "d" (Å)**	**0.0025d**	**0.0045d**	**"w" (Wt%)**
1	Allyl methacrylate		1100	2.75	4.95	1.00
Comparative Ex. 1	None		-			-
2	Allyl methacrylate		-			1.00
3	Allyl methacrylate		-			1.00
4	Allyl acrylate		-			1.00
5	Allyl methacrylate		-			1.00
6	Allyl methacrylate		-			1.00
7	Allyl methacrylate		-			1.00
8	Allyl methacrylate		2100	5.25	9.45	1.00
9	Allyl methacrylate	Same as Ex. 8	2100	5.25	9.45	1.00
Comparative Ex. 2	Allyl methacrylate	Same as Ex. 8 except addition time of monomer	2800	7.00	12.60	1.00
Comparative Ex. 3	Ethyleneglycol dimethacrylate	Same as Ex. 1 except cross-linking agent	1200	3.00	5.40	1.00
Comparative Ex. 4	Triallyl cyanurate	Same as Ex. 1 except cross-linking agent	1100	2.75	4.95	1.00
10	Allyl methacrylate	Same as Ex. 1	1100	2.75	4.95	1.00
11	Allyl methacrylate		1100	2.75	4.95	0.30

				Calculated Cross-linking Range Permitted by Present Invention		
Example	**Cross-linking Agent**	**Remarks**	**Particle Size "d" (Å)**	**0.0025d**	**0.0045d**	**"w" (Wt%)**
12	Allyl methacrylate		1100	2.75	4.95	0.50
13	Allyl methacrylate		1100	2.75	4.95	2.00
14	Allyl methacrylate		1100	2.75	4.95	5.00
15	Allyl methacrylate		1100	2.75	4.95	7.00
Comparative Ex. 5	Allyl methacrylate	No benzyl acrylate	-			1.00
Comparative Ex. 6	Allyl methacrylate		1100	2.75	4.95	1.00
Comparative Ex. 7	Allyl methacrylate		1100	2.75	4.95	1.00
Comparative Ex. 8	Allyl methacrylate		1100	2.75	4.95	1.00
Comparative Ex. 9	Allyl methacrylate		1100	2.75	4.95	1.00
Comparative Ex. 10	Allyl methacrylate		1100	2.75	4.95	1.00
16	Allyl methacrylate		1100	2.75	4.95	1.00
17	Allyl methacrylate		1100	2.75	4.95	1.00
18	Allyl methacrylate		1000	2.00	4.50	1.00
19	Allyl methacrylate		-			0.30
20	Allyl methacrylate		-			0.50
21	Allyl methacrylate		-			1.00
Comparative Ex. 11	Allyl methacrylate		-			0.30
Comparative Ex. 12	Allyl methacrylate		-			0.50
Comparative Ex. 13	Allyl methacrylate		-			1.00

In two Examples, i.e., Examples 14 and 15, Kameda et al employed cross-linking agent contents of 5 and 7 wt%, which are above the upper limit of the range defined in the present claims as shown in the Table above. Applicants submit that one of ordinary skill in the art would have no reason to vary the 5 and 7 wt% amounts in these examples of Kameda et al to arrive at the range set forth in claim 1, and that any such variance to arrive at the presently claimed range from the teachings of Kameda et al would be based on hindsight.

The cross-linking agent amounts in Examples 14 and 15 of Kameda et al are also above the upper limit of Kameda et al as explained below.

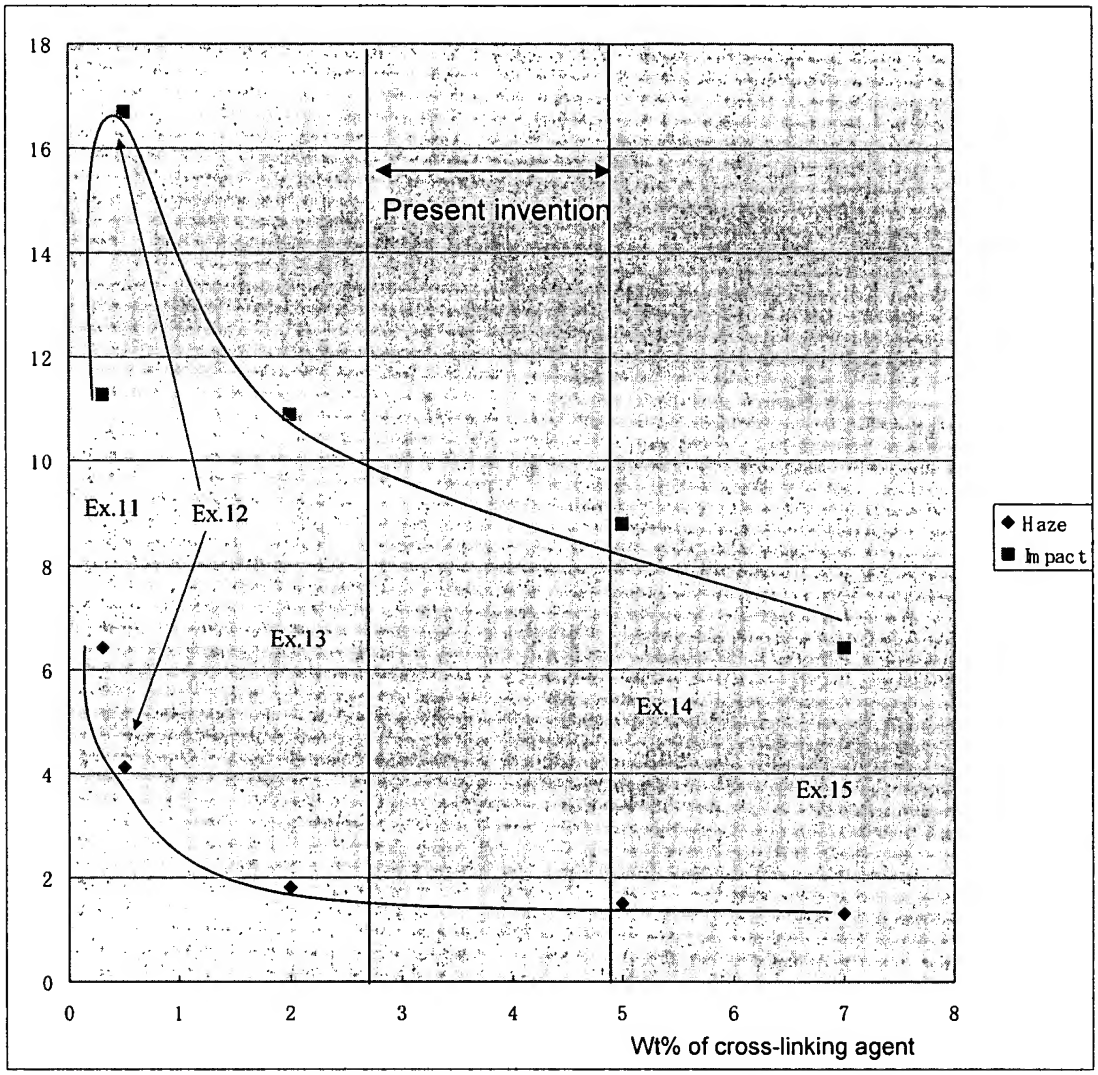
The Kameda et al disclosures concerning cross-linking agent contents are set forth based on component (I), which is an alkyl acrylate, and component (II), which is the cross-linking agent, as follows.

> (Claim 1, column 23 lines 35 to 37)
> ...component (II) is present in an amount of 0.5 to 5 parts based on 100 parts of component (I) and ...
>
> (Column 2 lines 32 to 34)
> ...component (II) is present in an amount of 0.5 to 5 parts based on 100 parts of component (I) and...
>
> (Column 3 lines 48 to 51)
> Thus, it is essential to the invention to employ alkyl acrylate and/or alkyl methacrylate as a cross-linking agent in an amount of 0.5 to 5 parts by weight based on 100 parts by weight of alkyl acrylate.

Cross-linking agent (allyl methacrylate) contents of 5 and 7 wt% in Examples 14 and 15 of Kameda et al correspond to 7.5 and 10.8 parts by weight based on 100 parts by weight of alkyl acrylate (n-butyl acrylate).

Accordingly, Examples 14 and 15 are not preferable examples of Kameda et al, and are not examples within the scope of claim 1. Actually, in these Examples 14 and 15, insufficient impact strength is achieved as shown in Table XVII of Kameda et al and the graph below.

Impact strength and haze in Examples 11 to 15 of Kameda



In view of the above, applicants submit that although Kameda et al teach a cross-linking agent content of 0.5-5 pbw based on the amount of alkyl acrylate and a particle size of 500-2500A, one of ordinary skill in studying the Kameda et al teachings would be led to employing a content of cross-linking agent 1 wt% or less.

Even if one of ordinary skill in the art would employ a cross-linking agent content of more than 1 wt% based on Kameda et al, applicants submit that such a person would employ a content 2 wt% or less, and would not employ more than 2 wt%, because impact strength will be deteriorated when exceeding 2 wt%. Accordingly, applicants submit that one of ordinary skill would not be led to employing the cross-linking agent content of the present invention from the disclosure of Kameda et al.

In addition, applicants submit that the present invention as set forth in claim 1 exhibits improved and unexpected results with respect to stress-whitening resistance. These results support the patentability of claim 1 over Kameda et al.

The film of the present invention has an advantageous effect in that it has excellent stress-whitening resistance. Although Kameda et al disclose that processability, luster, transparency and impact resistance of the composition are improved, Kameda et al do not disclose or suggest this effect of stress-whitening resistance. The advantageous effect of the present invention is demonstrated within a narrow range defined by claim 1 of the present application. Applicants submit that it cannot be predicted from Kameda et al that an excellent stress-whitening resistance can be obtained within such a narrow range of a cross-linking agent content.

The present invention has excellent stress-whitening resistance when a film is folded three times. Applicants enclose an executed Declaration Under 37 C.F.R. § 1.132 to show this result. Kameda et al do not disclose such an effect. Applicants especially refer the Examiner to the results for "New Example 3" in Table 2 of the Declaration. New Example 3 employed a particle size of 1100A and an amount of cross-linking agent of 5% by weight, which are the

identical parameters set forth in Example 14 of Kameda et al. As can be seen from Table 2, New Example 3 did not achieve the results of the present invention with respect to stress-whitening resistance at a 3 times fold, and instead exhibited significant stress-whitening.

In view of the above, applicants submit that Kameda et al do not defeat the patentability of the present claims.

Turning now to JP '192, it does not supply the deficiencies of Kameda et al with respect to the range of $0.0025d \leq w \leq 0.0045d$ set forth in claim 1, and does not disclose the advantageous effect of excellent stress-whitening resistance possessed by the present invention. Therefore, applicants submit that the present invention is unobvious from Kameda et al or the combination of Kameda et al and JP '192.

In view of the above, applicants submit that Kameda et al and JP '192 do not disclose or render obvious the subject of the present claims and, accordingly, request withdrawal of this rejection.

Claim 5 has been rejected under 35 U.S.C. § 103(a) as obvious over Kameda et al in view of JP '192 and further in view of WO 02/085620 A1 to Nishimura et al.

Claim 5 depends, ultimately, from claim 1. Accordingly, applicants submit that claim 5 is patentable for the same reasons discussed above with respect to claim 1 and, therefore, applicants request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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